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American School
of Classical Studies
at Athens

THE EAST WALL OF THE ERECHTHEUM

[PLATES VI–IX]

DURING the recent restoration of the Erechtheum, conducted by the Greek Archaeological Society, certain peculiar blocks of that temple were, for the first time, carefully examined, in the attempt to ascertain their original positions. They were found inside the temple, and are now lying in front of the east portico. The peculiarities of these stones would seem to indicate that they belonged to the wall directly behind the east columns. If this point can be established, it will follow that the east wall had a central door with a window on either side of it.[1]

PLATE VI is a general plan of the Erechtheum. On the north one sees its relation to the Acropolis wall and on the south to the Old Athena Temple. To the east is an open space, and to the west are the scanty remains of the Pandroseum; these consist of rock cuttings and a few *poros* foundation blocks.

We reconstruct the east wall as pierced with three openings, — a large central door, with a window on either side. These windows would throw a better light upon objects placed along the northern and southern walls than would the door alone. The columns of the east portico do not stand at a great distance from the wall behind them.

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[1] Acknowledgment is here made of the courtesy of M. Balanos, the architect in charge of the reconstruction, who has assisted us in every possible way; Dr. Dörpfeld, too, has always been most willing to help with his kind and valuable advice.

This investigation would have been entirely impossible without the direct supervision and assistance of Dr. Heermance, the late Director of the American School at Athens, whose lamented death has come as a great blow to the cause of archaeology and as an irreparable personal loss to all who knew him.

Figure 1 shows, in plan, the present state of the temple. The east wall was demolished to make way for the apse of a mediaeval church, and the *poros* foundation blocks under the Greek east wall were also taken away to provide space for the circular part of the apse ; these were used as foundation stones in the middle of the church, and were laid upon a bed of mortar and broken stones, in which one may still see fragments that belong to the east wall.

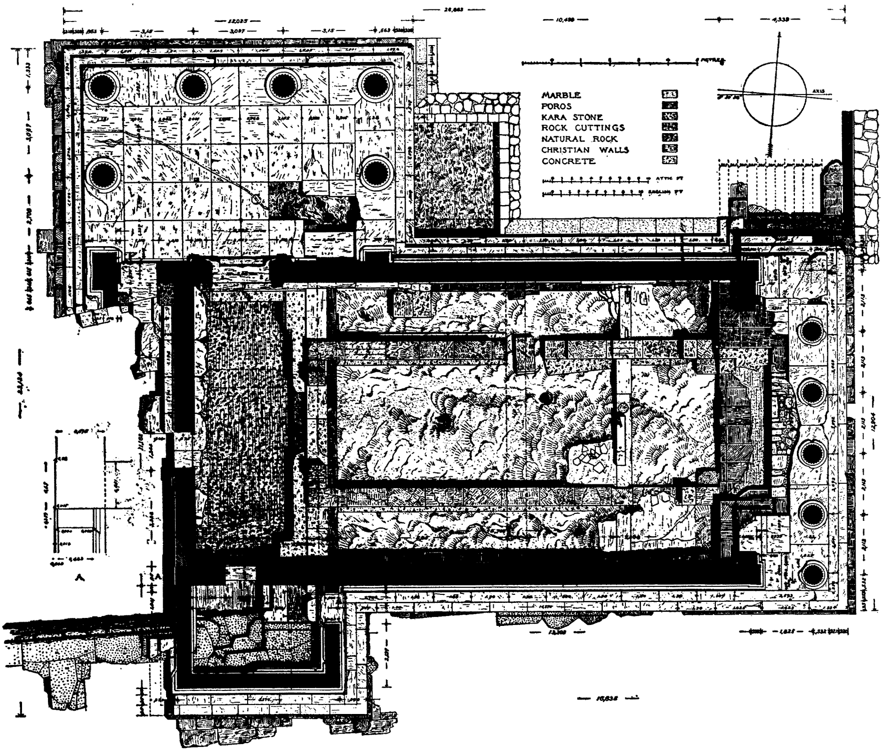
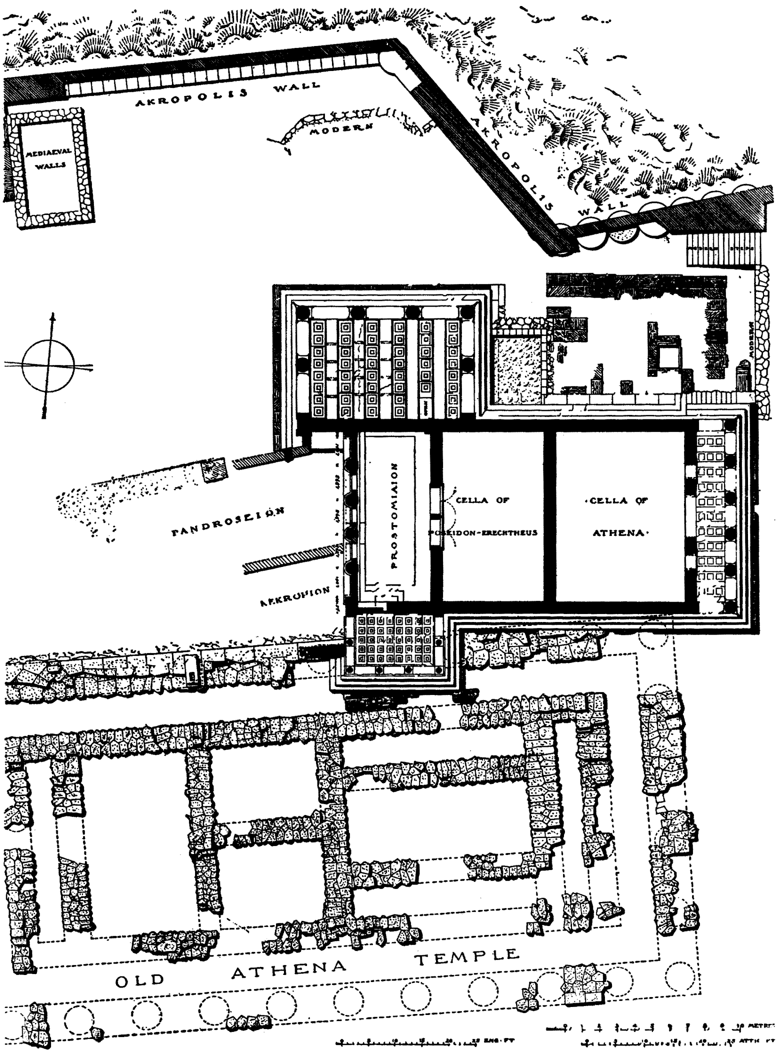
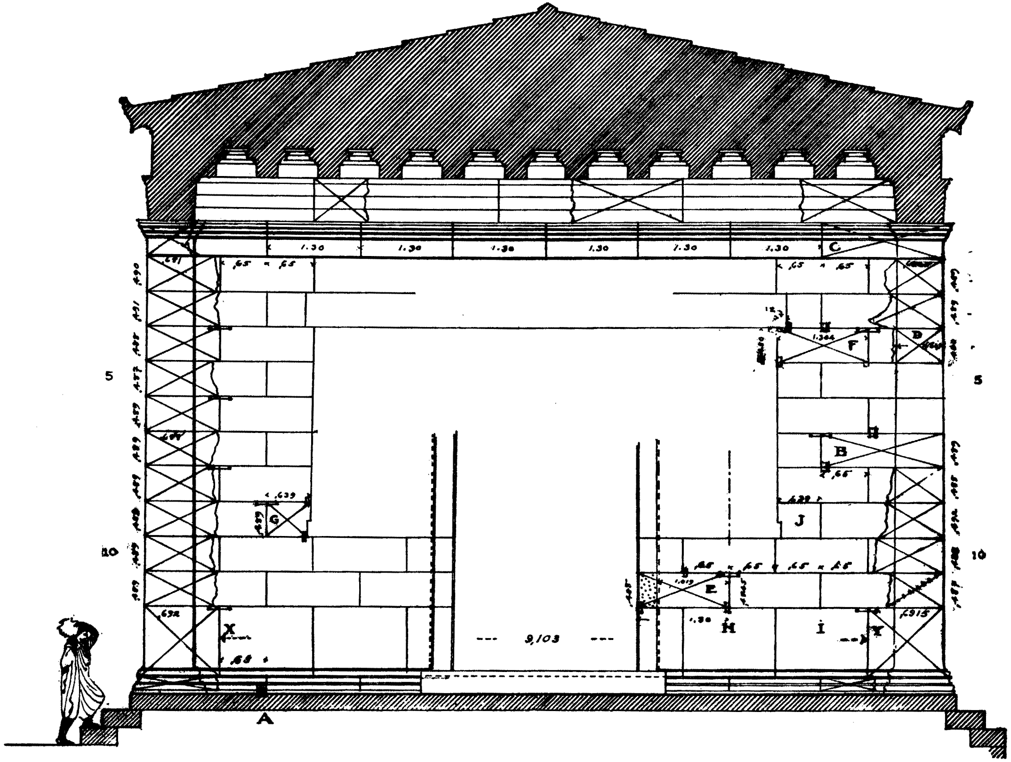


Figure 1. — Erechtheum, Plan : Present State.

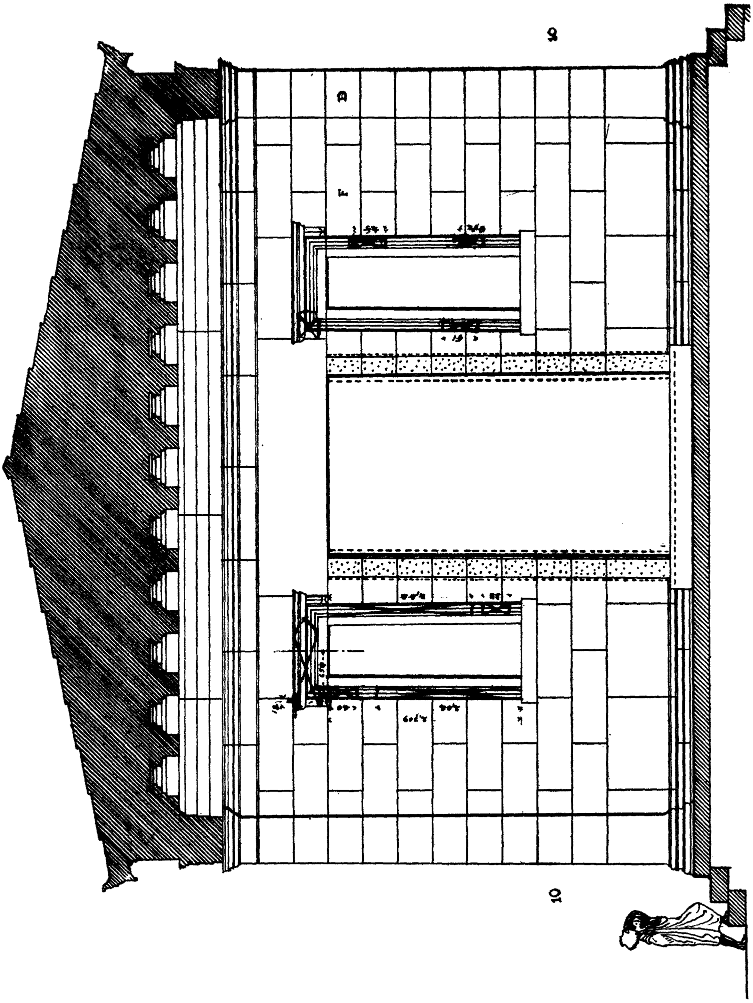
The next illustration (Fig. 2) shows us, in elevation, the present state of the east portico. The preservation of the



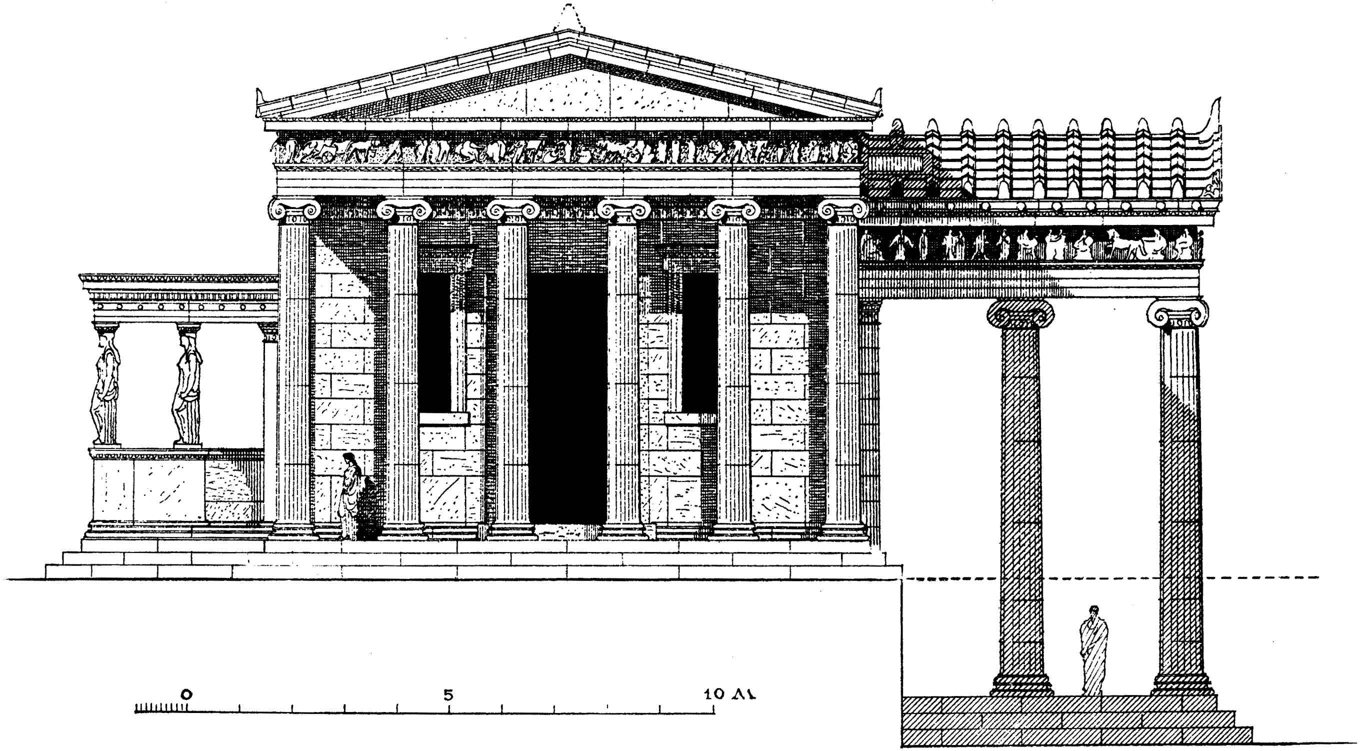
THE ERECHTHEUM: GENERAL PLAN



EAST WALL OF THE ERECHTHEUM, SHOWING THE STONES *IN SITU* OR IDENTIFIABLE



EAST WALL OF THE ERECHTHEUM, SHOWING WHAT WAS FOUND OF THE WINDOW LININGS AND THEIR LOCATION



THE ERECHTHEUM: EAST ELEVATION, RESTORED marble is admirable. The north column is now in London. The anta behind it was rebuilt in 1838, as an inscription on one of the wall blocks states. Moreover, the stones of this anta, above the lowest course, are not in their original places.

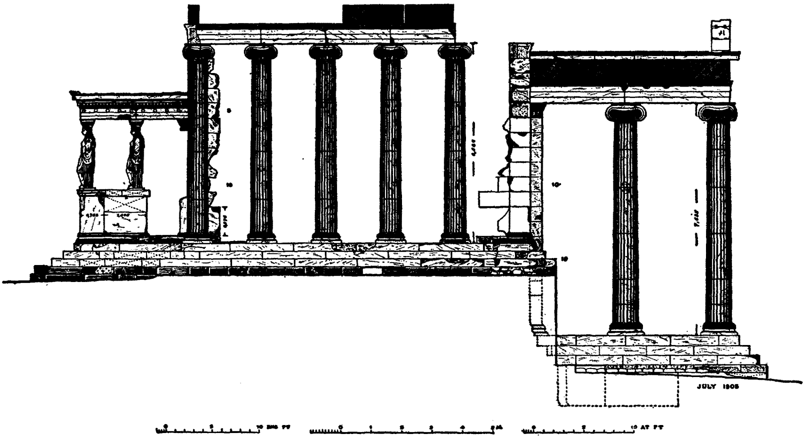


Figure 2. — East Elevation, Present State.

Figure 3 gives us the present condition of the south anta. It is still *in situ*, a fact of great importance in the study of the east wall. Note here the bonding of the anta stones — alternate long and short blocks.

The interior of the temple seems to have suffered from disastrous fires, if we may judge from the damaged condition of the marble. Literary evidence of this has been adduced.[1] From certain ancient building inscriptions concerning the Erechtheum,[2] we know that the roof was of marble tiles, supported by a wooden construction, and that, below the roof proper, came a flat wooden ceiling heavily coffered. This mass of combustible material, once ignited by accident or by lightning, would fall inside the temple, and would develop sufficient heat to change the inside face of the marble walls into line, but not the outside. This fact has greatly assisted in the identification of stones. There is additional confirmation of such a fire in the entire reconstruction of the west façade from the bases of the columns up, in the restoration of the lintel over the big door in the north portico, in the re-use of certain parts of the eastern ceiling where pieces of damaged beams were used again in short lengths, in the restoration of the coffers of the east portico, in the repairs of the inside face of the course below the architraves, and in similar restorations on the inside of the architrave blocks themselves. In fact, all parts of the building that would suffer from an internal fire seem to have undergone restoration in one form or another.

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[1] In 395–4 B.C. payment was made for repairs made necessary apparently by a fire, which injured the walls, especially to the west; cf. *I.G.* II, 829. The temple mentioned by Xenophon (*Hellen.* I, 6,1) as burned in 406–5 B.C. was probably the Hecatompedon. See Judeich, *Topogr. von Athen*, p. 244, note 6.

[2] *I.G.* I, 321 and 322, and Suppl. See also above, pp. 1–16.

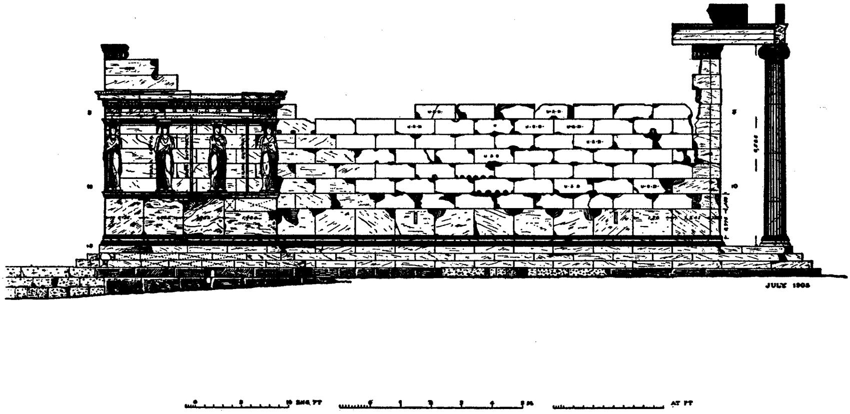

FIGURE 3. — SOUTH ELEVATION, PRESENT STATE.

The words "cramp," "dowel," and "pry hole" are employed so frequently in the following, that a few words of explanation at this point are appropriate. Cramps are pieces of metal holding stones of the *same course* together; there are several varieties, but we shall speak only of the double T-cramp, so called on account of its resemblance to two connected T's. Dowels are pieces of metal that bond the stones of one course with those of the course immediately above. Mention will be made of two varieties: the first rectangular in section, used in all parts of the temple, and running in the direction of the wall, as a rule; the second, a special one, T-shaped in section, used at the angles of the temple, and in places where there would be a tendency to slip in two directions. Figure 4 represents this special dowel as it occurs in the bottom of an angle anta block of the east portico. Here a slight earthquake might tend to shift the block in the direction of either wall, a tendency that would be corrected by these special dowels. Both cramps and dowels are held in place with lead. A pry hole, as the word implies, is a cutting large enough for a lever to catch in when used in prying the stone *above* into place. The direction of a pry hole is almost always at right angles to the direction of the wall (see Fig. 5).

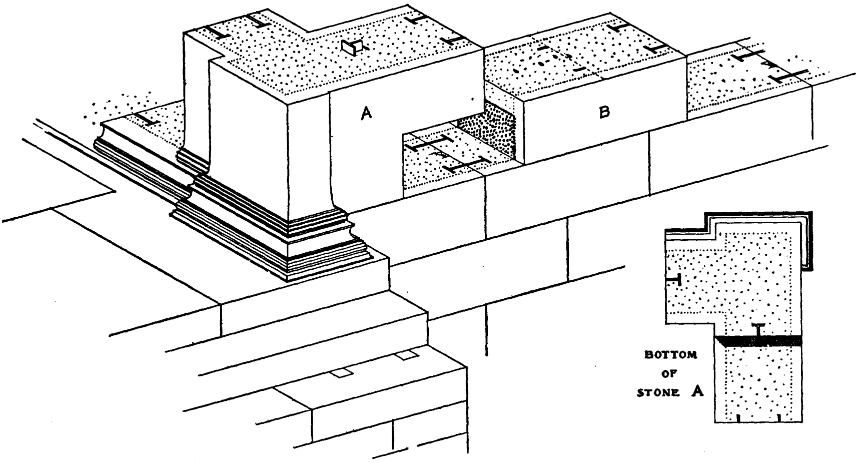

FIGURE 4.—NORTH ANTA BASE, EAST PORTICO.

The thickness of the east wall is different from that of all the others. The north and south walls measure 67.5 cm. and taper upward,[1] the inside, only, being vertical. The west wall is also 67.5 cm. thick at the top and at the bottom. The interior cross walls were each 65 cm. wide, with no taper.

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[1] This taper is very light, as will be explained later; the thickness of these walls, then, may be assumed as 67.5 cm. for our present purposes.

The east wall measures 63.9 cm. both top and bottom. It is the thinnest wall in the temple. A stone from the north wall or the south wall should, then, have an inclination or batter on its outside, the inside ought to show the effects of fire, and the thickness should be 67.5 cm. All the stones of the west façade, so far as we are concerned, are still *in situ*, and, therefore, need not be considered in any discussion of the east wall. Blocks from the cross walls should show the effects of fire on both sides. Blocks from the east wall should have no inclination of the front face, the inside face should be damaged by fire, and the width should be 63.9 cm. With a steel square, we can easily determine what stones have inclined faces: all such must belong to either the north wall or the south wall, and cannot, therefore, belong to the east wall.

Let us consider three stones now lying in front of the east portico, that display the characteristics of the east wall. They are represented in Figs. 5, 6, and 7: stones *E*, *F*, and *G*. To begin with *E*, its height and total length are the same as the height and length of ordinary wall blocks used throughout the temple. One side is badly damaged by fire (presumably the inside), so that the width cannot be directly measured; but we can find its width quite approximately by the cramp and dowel cuttings, the pry holes and shift holes, for these are placed very nearly symmetrically about the axis of the wall. Having three sets of dowels, one set on the top surface, and the other two sets on the bottom surface (one set at each end of the stone), a pry hole on top, and three sets of shift holes (two on the bottom and one near the top), the width of the block must have been about 64 cm. Applying the steel square to

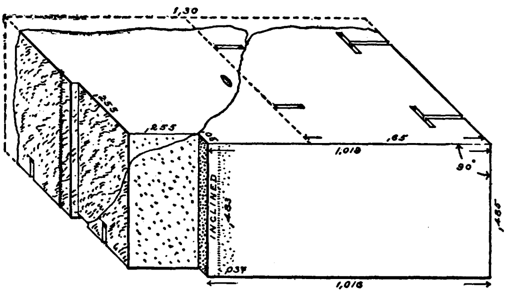

FIGURE 5. — STONE *E*.

the well-preserved face, we find that there is no inclination of the surface. The sinking, or rebate, on the left is of good Greek workmanship, and has an inclination to the left, as it rises, of 3 mm. per course. Also, a weather line, 3.7 cm. to the right of the sinking, indicates that some durable material overlapped the sinking — perhaps bronze, or wood sheathed with bronze, judging from the traces of bronze oxidation still on portions of the marble. Clearly this stone comes from about an opening with a slightly inclined trim. In fact, we find a similar treatment about the doors of the Parthenon, of the Propylaea, and of many temples in other parts of Greece and Asia Minor. We shall try to find a place for this stone about the door in the east wall of the Erechtheum.

Stone *F* (Fig. 6) is only 48 cm. high, *about a centimeter less than the average height.* Its length is 1.304 m. at the top; its width, as calculated from the cramp and dowel cuttings, is 64 cm.,[1] and the front face shows no inclination. It is damaged by fire on one side — the inside rather than the outside. The dowel, in the centre of the top surface, is of the special type that is used on the angles in connection with the anta, — as previously explained, — to prevent the corner-stone of the course above from slipping either forward or sidewise — a double tendency that would occur at the angles of the temple. Therefore, the right-hand end of stone *F* must have butted against a short anta block (an anta block 48 cm. high, it should be remembered), in order to have held the long anta stone *above* by this special dowel. The dowels and pry holes on the

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[1] Calculated width of stone *F*.

	A	B	C
Top north cramps	28.2 +	2 (17.5) =	63.2
Top south cramps	28.2 +	2 (17.5) =	63.2
Top middle dowel		2 (32.3) =	64.6
Top south dowels	31.5 +	2 (16.5) =	64.5
Bottom south dowels	23. +	2 (20.7) =	64.4
		5)	319.9
			63.9 average.

Table *A* = axial distance between a pair of dowels or cramps.
Table *B* = twice the distance from face of stone to axis of dowel or cramp.
Table *C* = calculated width of stone.

left of the upper surface of stone *F* show that the stone in the course above overlapped the left-hand edge of stone *F* some 12 cm. We should have to have such an arrangement supposing that stone *F* supported a lintel and went to the right of an opening. That stone *F* did go in such a position is proved by the fact that its left-hand edge is inclined, the stone measuring across the face more at the top than at the bottom. This inclination is 3 mm. per course. Therefore, this stone touched a short anta stone on the right, came from about an opening, and supported a lintel with a bearing of 12 cm. It also follows that the *lining* of the opening was secured by cramps at the top, and must have had an inclination of 3 cm. per wall course.

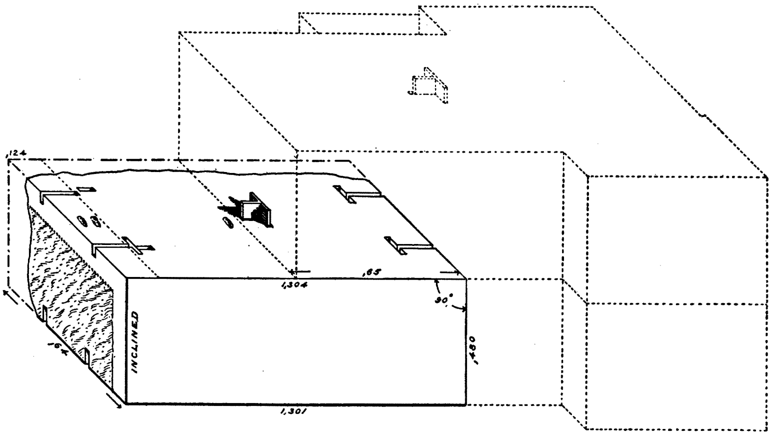

Figure 6. — Stone *F*.

Stone *G* (Fig. 7) is very peculiar. Its height is 48.9 cm., just the average. Its thickness, as calculated from cramp and dowel cuttings, is 64 cm.[1] Its length at the top is 63.9 cm. or

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[1]

	A	B	C
Top north dowels	32.5	+ 2 (15.5)	= 63.5
Top south cramps	33	+ 2 (15.9)	= 64.8
Bottom dowels	31	+ 2 (16.5)	= 64.
			3)192.3
			64.1 average.

Table *A* = axial distance between a pair of dowels or cramps.
Table *B* = twice the distance from face of stone to axis of dowel or cramp.
Table *C* = calculated width of stone.

about 1 cm. less than one-half a wall block. One side is damaged by fire. The steel square shows that its well-preserved face has no inclination. The same test shows that the right-hand edge is inclined to the right as it rises, this inclination being 3 mm. per course, the same as for the stone just spoken of, stone *F* (Fig. 6). And the existence of a pair of dowel cuttings together with a pry hole near the right-hand upper edge of the stone, proves that two vertical joints came over one another at this point. These facts can be explained if we think of stone *G* as coming from about an opening that had some sort of inclined jamb or lining. Moreover, the ancient cutting in the lower right-hand corner of the stone suggests just such as would be needed by the sill of a window — for the moulding of the *lining* would project somewhat from the face of the wall, and would, therefore, have to rest at the bottom on a projecting sill. Stone *G*, then, might very well have come from the bottom of a window. On this assumption, and remembering that stone *F* (Fig. 6) came from the top of an opening with a similar inclination, an approximate estimate of the *height* of this window (or opening) can be made, as we know the inclination of the linings (3 mm. per wall course) and the amount the stone at the *top* of the opening overhung the stone at the *bottom* of the opening. This amount is 1.5 cm., and is found by subtracting the width of stone *G* at the top from the width of stone *F* at the top, minus one-half a wall (65 cm.). Dividing by the inclination, we find that the opening ought to have been somewhat over *five courses high.*

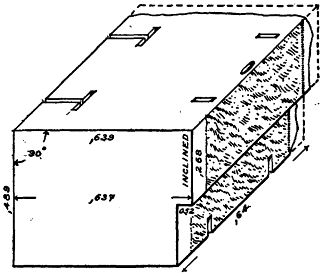

FIGURE 7. — STONE *G*.

These three stones, then, *E*, *F*, and *G*, exhibit the peculiar characteristics that blocks from the east wall must have had ; namely, fire damage on one side only, no inclination of the well-preserved face, and a width of 64 cm. Let us see what can be done toward finding their original places.

On PLATE VII, which is a sketch of the east wall behind the columns, the diagonals have been drawn of the stones still *in situ*, and of those whose position we have been able to identify.

Let us begin by considering the architectural treatment of the east wall, as given by what is still *in situ*. We know that the base mouldings of the antae ran along the base of the wall; that the lowest wall course projected 1 cm. from the wall face above; that the mouldings of the antae caps, with the palmette ornamentation beneath, were carried across the wall, probably from anta cap to anta cap, as in the north portico; that architrave blocks rested on these last-named mouldings; and that the ceiling was of stone. Now, the inscriptions,[1] already alluded to, state that the wall blocks of the temple were 4 feet long; that is, 4 Attic feet, or about 1.30 m. The distance between points *X* and *Y* (PLATE VII), two known points, measures 9.103 m. Dividing this by 1.30 m. gives 7; that is, 7 wall blocks, each 1.30 m. in length, would just fill the space between *X* and *Y*. Moreover, a dowel preserved at *A*, and the distance the anta stones *B* and *C* overlap the stones below them, strengthen this supposition, the distance from the corner joint being in each case 65 cm., or one-half a wall block. Therefore, we may safely assume that many 4-foot blocks, 1.30 m. long, were used in this wall. The course decorated with palmettes would, presumably, run across the façade without interruption. Seven blocks, then, each 1.30 in length, could just be put between the stones of either anta cap. This would be continuing the same length of block used in the same course along the north and south walls.

Turning to the antae, we find that the south one is completely *in situ*. Its width at the top of the bottom wall course is 69.2 cm., and at the top of the anta 68.1 cm. The reading halfway between these points is 68.8 cm., or 2 mm. greater than the arithmetical mean between the top and bottom readings. This indicates that the entasis is negligible. From actual measurements the axis of the anta was found to be vertical. As the anta is smaller at the top than at the bottom, the left-hand edge must be inclined inward as it rises, and, as the surface of the south wall is parallel to this anta edge, it follows that the whole surface of the south wall must also be inclined inward as it rises. This is one of the characteristics already alluded to of the south and north walls. The regularity of the heights of the courses is remarkable — the average being 48.9 cm., and the greatest departure from this figure only 2 mm.

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[1] For example, *I.G.* I, 322 *passim*.

The north anta, as before stated, was reconstructed in 1838, and no attempt was made to put the stones above the bottom wall course in their correct places. The width of the anta at the top of the bottom wall course is 69.15 cm. and at the top of the anta 68.25 cm. (The anta cap is preserved in the British Museum.) Of the anta stones below the cap, there are only two that cannot be found, and, supposing that the anta tapered upward without an entasis (or swelling), like the south anta, by a simple calculation we can find the original position of any anta stone we may desire; for example, one of these anta stones measures 68.49 cm. across the middle of the anta face. This is 6.6 mm. less than the bottom reading. There are ten courses between the bottom and top readings, and a total diminution of the anta face between these points of reading of 9 mm., or 0.9 mm. per course. Dividing 6.6 mm. by 0.9 mm. gives 7⅓, and shows us that this particular block originally occupied the eighth course above the bottom reading. Furthermore, this eighth course should have a long angle block on the north side of the anta, to continue the bonding of the north wall as it starts from the anta base, and this particular stone is, fortunately, entirely preserved on this side, and corresponds in length to the anta stone required at this place. This makes it doubly assured that the correct position of this anta stone has been found. The heights of the courses are as regular as those of the south anta, with the exception of this one stone that we have been considering, — the height here is only 48 cm., whereas the average height is 48.9 cm., a difference of almost 1 cm. This is of importance, for on it depends the position of stone *F*, as we shall see.

The position of stone *E* is found by supposing the vertical joints *H* and *I* to come on the axis of the stones above — this would be making these latter stones 4-foot blocks. Due regard must also be paid to the width of the door. That is, if stone *E* had been placed one-half a block nearer the axis of the building, the door would have been diminished by the width of a whole block, making the opening only 1.30 m. wide — a figure too small for a temple door. In the same way, if stone *E* had been placed one-half a block away from the axis of the building, the door would have become too wide.

It has been shown that stone *F* butted against a short anta stone in order to hold a long anta stone above by the peculiar dowel already spoken of. Stone *F* may, then, have come from the second, fourth, sixth, eighth, or tenth courses above the bottom wall course. We have also seen that stone *F* came from the top of an opening at least five courses in height above the top of the bottom wall course. Therefore stone *F* could not have come from the second or fourth courses above the bottom wall course. Stone *F* could not have come from the tenth course, because the anta stone which it would have to touch is almost 1 cm. higher than stone *F*. Stone *F* could have come then only from the sixth or eighth courses. The anta stone of the sixth course is missing, so that we do not know its height. Now, with a window opening five courses in height, the best place for stone *F* (the top stone from that opening), as a matter of architectural design, is in the eighth course. Furthermore, stone *F* has the same height as the anta stone of the eighth course (stone *D*), 48 cm., and this height is a peculiar height, being almost 1 cm. less than the average. Therefore we may feel fairly certain that the position of stone *F*, as shown here, is correct.

In accordance with what has already been said, the left edge of stone *F* may be prolonged downward for five courses, at which point we ought to have a stone symmetrical to *G*, stone *J* in the drawing. As there can be no doubt but that all the stones of this wall were placed symmetrically about the axis of the temple, stone *G* should be put in a position symmetrical to *J*, and we should also have a stone similar to *F* and similarly placed with its right-hand edge prolonged downward to stone *G*. About the door, also, there should be a stone similar to *E* and symmetrically placed with regard to the axis of the temple. The façade looks now as though it might have had a door with a window on either side. If this was so, can the dimensions and design of the window lintel and linings be discovered? The width of the window may already be guessed at, for one would naturally suppose the axis of the window to come directly over the stone below (*H*). Can this supposition be corroborated? We shall see that these various conditions can be satisfied by the fragments of a lining whose workmanship and constructional features are quite similar to the workmanship and constructional features of the Erechtheum. (Cf. Figs. 8 and 10.)

Inwood, early in the last century, seems to have been the first to connect two of these fragments (alluded to above) with the Erechtheum. He attributes them to the door in the east wall, and says[1]: "The execution of the carving in these fragments equals in beauty the other ornaments of the temple, and, being the same character, combining the platted enrichment so much used in this example of Ionic architecture, it seems possible that it may have belonged to the enriched east doorway, which is the only entrance into the temple of which there are no remains standing." Middleton[2] had more data to deal with, and, realizing that certain points were inconsistent with a large door (the principal one being that the lintel was but one course in height, whereas even the small doors had lintels two courses in height), he tried to show that the pieces might have come from the small door in the west wall, under the engaged columns. To-day there are 21 pieces, 6 of them being lintel fragments and the other 15 vertical lining fragments or jamb pieces. The larger fragments were found near the Erechtheum; the smaller pieces have been collected from all parts of the Acropolis and its neighborhood. Three of the pieces were discovered inside the Erechtheum itself, two of these later pieces being still embedded in the concrete footings of the church foundation walls, — a point of interest, as it shows that these fragments were no longer performing their original duty when the church foundation walls were laid. The 21 fragments furnish sufficient evidence to prove that these particular linings could have come from a door neither in the east wall nor in the west wall. They do, however, satisfy every condition demanded by two windows in the east wall.

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[1] Inwood, *The Erechtheion at Athens*, p. 15; cf. pl. xx.

[2] *J.H.S.* Supplem. III, pl. xvii.

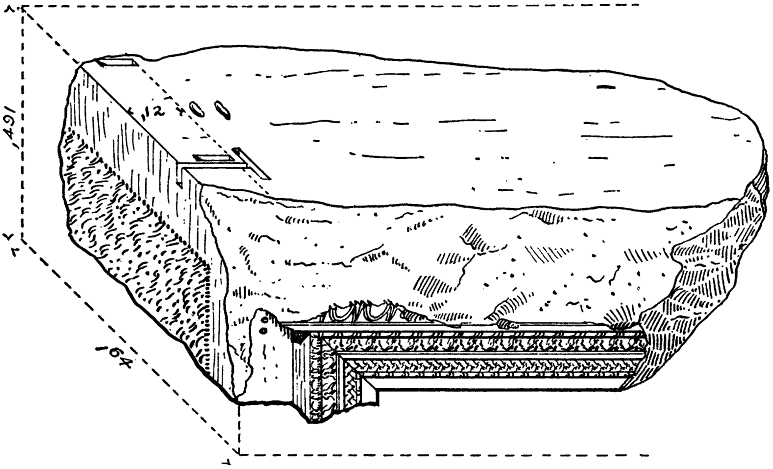

Figure 8. — Largest Lintel Fragment found: Isometric.

It is not at all probable that these linings could have come from a building other than the Erechtheum. The cramp cuttings, the dowel cuttings, and the wonderful carving of the ornaments prove that these pieces came from a Greek building of the best period. The profuse carving would hardly be in keeping with a Doric structure, but would, on the other hand, be appropriate to a temple of the Ionic order. Excluding the Nike Temple, whose simple design is well established, the Erechtheum was the only Ionic temple of this period on the Acropolis that we know of.

Figure 8 represents the largest fragment (cf. Figs. 9, 11), a lintel with an ancient cutting at the left, where a console was attached by two bronze plugs. One of the Erechtheum building inscriptions[1] states that a console, destined for an eastern lintel, was not in place at the time the inventory was made ; this has generally been considered as referring to the lintel of the door, but there is nothing in the text that would not let it apply equally well to the window lintel. The lintel is preserved for only 38 cm. of its original height. That this original height equalled a wall course is indicated, in the first place, by the proximity of the mouldings that frame the opening to the top of the lintel—for if the lintel had been two courses in height, the frame about the window would have been over 80 cm. wide, or 20 cm. wider than the linings of the big door in the north portico — quite too wide ; in the second place, by the small size of the console (only 12 cm. wide) when compared with the console (24 cm. wide) of the door in the north portico, where a lintel two courses in height was used; and in the third place, by the spacing of the vertical Lesbian ornament, which works out, as shown in Fig. 11, exactly for a lintel 49.1 cm. in height, by making a tongue of that ornament come on the joint — a fact given by two top lining pieces that are preserved. The cramp and dowel cuttings in the top of the lintel have the same dimensions as those throughout the temple, and their spacing shows that the lintel originally went in a wall about 64 cm. wide.[2] Also,

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[1] *I.G.* I, 322 ii$^{93, 94}$: *οὗς τῷ ὑπερθύρῳ τῷ πρὸς ἕω | ἡμίεργον.*

[2]

	A		B		C
Top dowels	27.6	+	2(18.2)	=	64.
Pry holes			2 (32)	=	64.
					64. average.

Table *A* = axial distance between a pair of dowels.
Table *B* = twice the distance from face of stone to axis of dowel.
Table *C* = calculated width of stone.

the dowels and pry holes on top indicate that the stone above overlapped the lintel some 12 cm., and, if the stones butting against the anta blocks were 4 feet long, the lintel would have a bearing on the stone below of some 12 cm., just as our supposed window demands. Moreover, the under side of the lintel has a finish very inferior to the best Greek work, and this same finish occurs on the reveals of the vertical linings. Perhaps the flames of a fire within burst out through these windows and destroyed the marble they came in contact with. It would be an easy and economical way to restore such damage by cutting away the injured portions, and by lining the reveals with slabs of marble or with wood sheathed with bronze. This lintel, then, satisfies all the conditions needed for a window lintel in the east wall: namely, height, width, bearing, and fire damage.

The following illustration (Fig. 9) shows the wonderful carving of this fragment, in excellence equalling the very best work on the temple. It is a left-hand end of a lintel, as the console cutting shows. The direction of the platted ornament, or guilloche, should be noted.

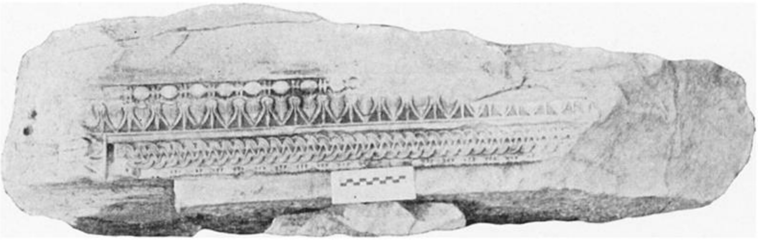


FIGURE 9.—LARGEST LINTEL FRAGMENT FOUND: PHOTOGRAPHIC.

The next illustration (Fig. 10) represents a second lintel fragment. The excellence of the workmanship equals that of the big lintel piece. But the points to be noted especially are, first, that this piece, like the fragment just shown, is the left extremity of a lintel; that is, the positions of these two pieces with regard to the window (or windows) were exactly similar. They were upper left-hand corners. Secondly, the direction of the guilloche here is reversed when compared with that in the big lintel fragment. Clearly there were two lintels, and therefore two openings — our two windows.

The fragments of the vertical linings also show that there were two openings. There are fifteen of these pieces preserved, including two top pieces and one bottom piece. Now, the guilloche of twelve of these has the same direction as that of the big lintel fragment, and the remaining three the same direction as that of the small lintel piece.

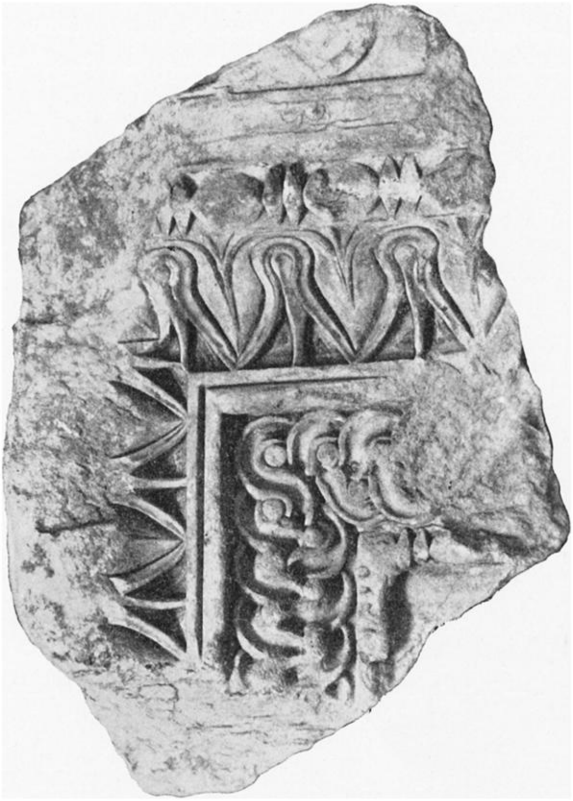
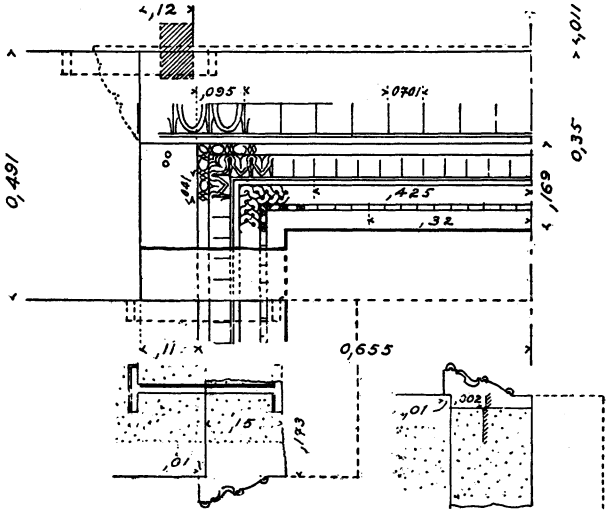


Figure 10. — A Second Lintel Fragment.

One top piece (see Fig. 11) has a cutting for a cramp similar to those elsewhere in the temple, and, in addition, the steel square shows that the lining was inclined outward from the axis of the opening as it descended 3 mm. per wall course, — the same inclination that stones *F* and *G* have.

The bottom piece (see Fig. 11) is identified by the dressing of the under surface, so that the weight of the linings and stonework above should not come near the delicate mouldings of the face, just as in the case of the bottom drums of Doric columns. The mouldings at the base of the lining were, perhaps, started before the lining was put in place, as a guide for the final finish of the window trim to be given at the last moment. Here, too, the steel square shows us that the lining was inclined inward (toward the axis of the window) as it rose, 3 mm. per wall course. Again, this inclination is the same as that of stones *F* and *G*. Moreover, the method of hiding the joint between wall and lining is the same for the bottom piece as for all the pieces of the lining. As the bottom wall course projects 1 cm. from the



TOP BOTTOM

FIGURE 11. — DATA FROM THE LARGEST LINTEL FRAGMENT AND TOP AND BOTTOM JAMB PIECES.

wall face above, on both the east and west façades, a horizontal section of a lining placed before such a bottom projecting course could not be similar to a horizontal section taken above *that course.* As the top and bottom pieces of this lining are similar in profile, if this lining came from the Erechtheum at all, it must have been placed entirely above the bottom wall course, as would happen in the case of windows, and not in the case of doors.

The axis of the window lintel, and so the width of the window itself, may be determined from three bands of ornament carved on it; namely, the egg and tongue, the leaf and tongue (called the Lesbian), and the bead and reel. As all the ornamentation must have been symmetrical about the axis of the lintel, to find this axis, we must look along the lintel until we come to that point where the axes of all three of these bands come over one another. The axial distance of the eggs is 7.01 cm., and its relation to the other bands is preserved (see Fig. 11). So we may lay this distance off until we find a point where an axis comes directly over an axis of the Lesbian band below; and, as a further check on the work, this same axis should also pass through a vertical axis of the bead and reel ornament. This coincidence of axes occurs at a distance of 65.5 cm. from the console cutting — a distance that is just required for our window, if it is placed on the axis of a 4-foot stone below, and if due consideration is given to the inclination of the linings and the way these latter overlapped the wall blocks so as to conceal the vertical joint between wall and lining.

Plate VIII shows these various fragments sorted according to the direction of the guilloche, and fitted about two windows. The axes of these windows come over the 4-foot blocks below them, as was stated in the last paragraph. It is very improbable that the two-course lintel of the door (to be spoken of further on) overlapped the window lintel; hence, the existence of dowels in the top surface of the larger window lintel would tend to show that this lintel, and its linings, belonged to the left-hand window. We are indebted to Mr. Bosanquet, the Director of the British School, for the length of the left-hand lining. At Mr. Bosanquet's request, Mr. Cecil Smith of the British Museum had a plaster cast made of a fragment of this lining preserved in London. This cast fitted a fragment now on the Acropolis, and proved that the lining was at least five courses in height. If the height of the window shown in PLATE VIII is correct, the Lesbian ornaments of the lining should be contained an exact number of times in the space between the sill and the underside of the lintel — a distance of 2.709 m. Twenty-one leaves have a length of 89 cm. This gives us an axial distance that is very accurate. The top piece of the vertical lining, or jamb, shows that the joint here came on a tongue of the Lesbian ornament. In the bottom piece, a tongue came 8 cm. above the base. This gives a distance of 2.629 m. between two tongues, and we find that 62 leaves will just occupy this space.

The similarity of the design of this window and that of the large door in the north portico is worthy of remark. Each has a broad trim that runs up one side, across the top, and down the other side. In each case the consoles are recessed from the trim and doweled to the wall — not a part of the wall, and in each case the consoles apparently support a set of architectural mouldings. It would look as if the door and windows had been designed by the same man.[1]

As for the lintel over the door of the east wall, we can neither believe that it was less than two courses in height, on account of its span, nor that its under surface lay below the under surface of the window lintels; nor could the lintel over the door interrupt the decorated band above it with propriety. Therefore, there does not seem to be any other arrangement possible than that shown in PLATE VIII. The lining of the door, whatever its character, must have had some thickness. The inside dotted lines have been drawn allowing space for such a lining and at the same time making the door opening just twice as high as it is wide — a simple proportion much employed by the ancient Greek architects, and furthermore used in the large door of the north portico.

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[1] No portions of the stone sills themselves have been found. Four jambs rested in these two sills; perhaps the complete profile of the jambs may some day be recovered from weather marks, if these sills are ever found.

If the under surfaces of the three lintels were at the same level, an explanation of the odd heights of stones *D* and *F* (see PLATE VII) may perhaps be given. As the construction of the wall advanced, there was no demand that the courses of the south anta should line exactly with the courses of the north anta, until the lintels were reached. Here there was an important course that ran right across the wall without a break. If the courses of the south anta had averaged slightly greater than the courses of the north anta, this irregularity could have been counteracted by working off the course on which the lintels rested, on the high end. Hence the short, odd heights of stones *D* and *F*.

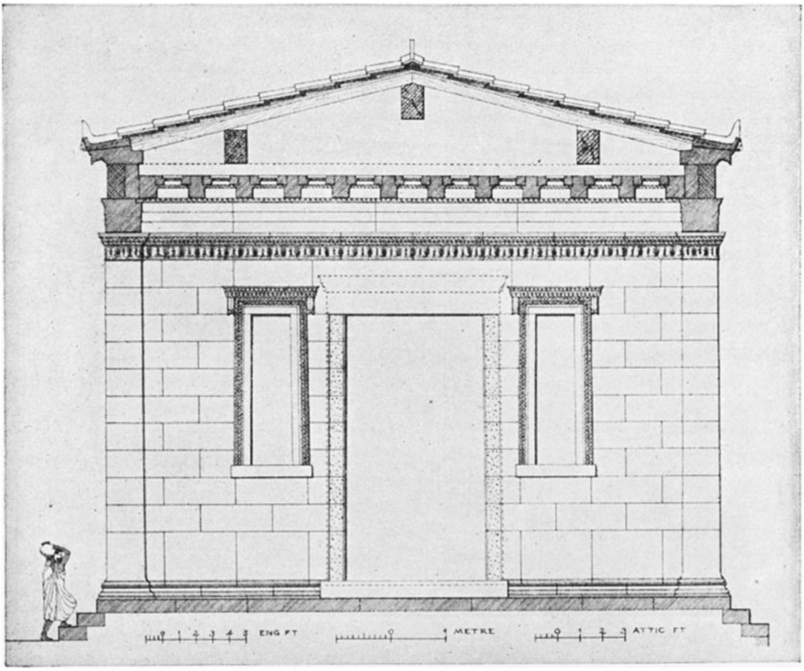

FIGURE 12. — EAST WALL, RESTORED.

Figure 12 represents the east wall, restored. The space between door and window could not be made less, it would seem, nor could the windows be pushed nearer the anta without appearing robbed of their light by the columns in front of them, as will be explained in connection with PLATE IX; and the windows could not be made wider for the same reasons. Also, as the window lintel is but one course in height, we should expect to find it placed over a narrow opening.[1]

It must be remembered that the columns of the portico do not stand a great distance from the wall, and that, therefore, openings in the wall ought to be considered in relation to the way the columns are placed.

PLATE IX gives a restoration of the east façade, showing the way the windows and door of the east wall would appear behind the columns. The windows do not come exactly between the columns of the portico, and yet if they are not displaced too much, the effect would not be disagreeable, inasmuch as the columns and the wall are in different planes, and, therefore, would always be seen in perspective. In Fig. 12 we have seen that the windows could not be pushed nearer the door. Here we can see that it would be dangerous to push the windows nearer the anta, for the columns would then seem to hide them and to deprive them of light. Thus, a narrow, tall window, in keeping with the vertical architectural note set by the columns of the portico, and placed as we see it here, seems to be the best possible solution if windows must be had.

There are examples of temples with windows, but these are of later date than the Erechtheum. The circular temple at Tivoli, Italy, may be adduced. But in Athens, and on the Acropolis itself, we have a striking example of the use of windows in the so-called Picture Gallery (the north wing of the Propylaea), a building of about the same date as the Erechtheum. In Fig. 13 we have a plan of this part of the Propylaea.[1] The south wall of the Picture Gallery is pierced with a door and two narrow windows. The door does not come on the axis of the wall nor halfway between the columns in front. The windows are not placed symmetrically about the door, nor have they any relation to the columns in front. Nothing could be more unsymmetrical, and yet it is doubtful if one person out of ten, looking at this façade, would remark the fact. The chief point of interest to us is that the windows are placed without any regard to the columns in front of them, the great space between columns and wall permitting this.

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[1] The windows are placed so near the door that a use of some material other than marble for the trim of the door would seem to be the only means of making the latter count as a distinct motive. We must think of this door, then, as having a bronze trim, before alluded to, and not a marble one, as in the north portico.

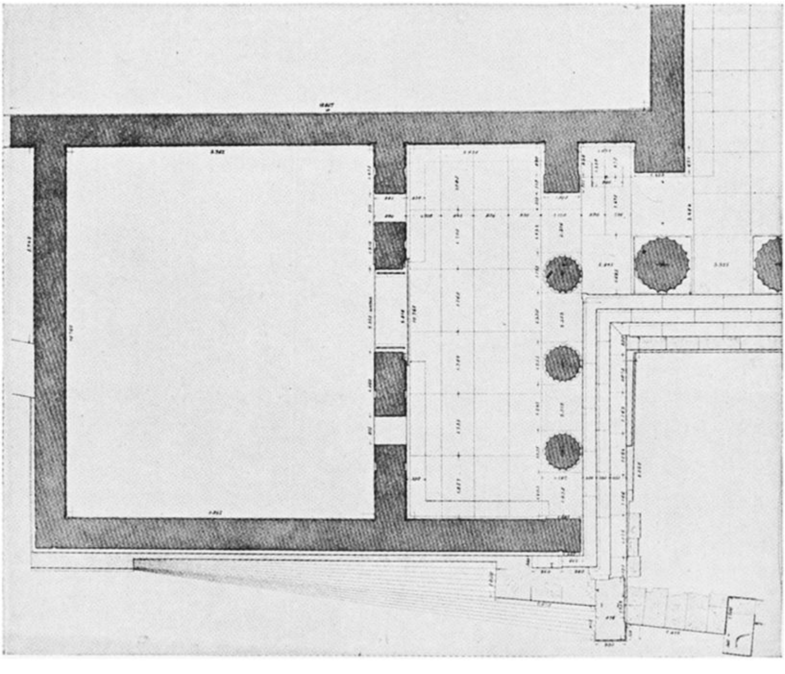

Figure 13.—Plan of the North Wing of the Propylaea of the Acropolis.

Figure 14 is an elevation of the entrance of the Picture Gallery.[2] We have a door, narrower at the top than at the bottom, with a trim about it, as the recess at the sides and the dowels in the lintel show. There are two narrow windows with a simple architectual trim of stone in keeping with the Doric order. Moreover, the tops of the three openings are at the same height above the pavement. One cannot fail to remark the striking similarity of this wall to the east wall of the Erechtheum.

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[1] Reproduced from Bohn's *Die Propylaeen der Akropolis zu Athens* (Taf. iii).

[2] Reproduced from Bohn's work, already quoted, Taf. ix.

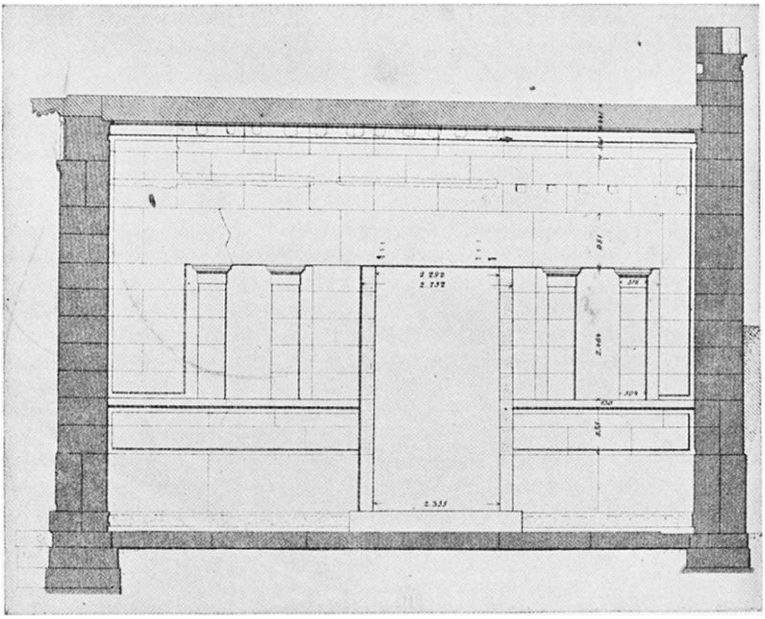

Figure 14. — Entrance to North Wing of the Propylaea: Elevation.

To explain windows in the east wall of the Erechtheum falls rather to the lot of the archaeologist than the architect, and the following points are presented as suggestions only. The existence of windows in this part of the temple would show that here, at least, the cella was not lighted from the roof, and, as before stated, objects on, or near, the north and south walls, would receive a good light. Pausanias, who visited the temple in about the year 160 A.D., states that he found inside the Erechtheum altars to Poseidon-Erechtheus, Butes, and Hephaestus, and that there were on the walls paintings of the family of the Butadae. If we remember that abundance of light entered the west cella between the columns on the west wall, and that the windows in the east, planned for from the beginning, threw a good light into the east cella, whether one puts the paintings in the east or west cella, it would seem as if the Erechtheum had been deliberately planned to serve, at least in part, as a well-lighted, religious museum.

GORHAM PHILLIPS STEVENS.